REMARKS

This is intended as a full and complete response to the Office Action dated June 16, 2004, having a shortened statutory period for response set to expire on September 16, 2004. Please reconsider the claims pending in the application for reasons discussed below.

In the specification, paragraphs [0008], [0018], [0021], [0022], [0023], [0024], [0026], [0030], [0032], [0035], and [0036] have been amended to correct minor editorial problems. Paragraphs [0018], [0021], [0022], [0023], and [0026] have been amended to correct the reference numerals for the anode and cathode electrodes. Reference numerals 215 and 213 have been added to paragraph [0021] to indicate the outlets shown in Figures 2 and 3. Reference numeral 414 shown in Figure 4 has been added to paragraph [0028]. In view of Figure 4, paragraph [0029] has been amended to correct the reference numeral for the cation exchange membrane and correct the description of the membrane closest to cathode 405 to cationic memberane 402. Applicants submit that the changes made herein are supported by the specification and drawings and do not introduce new matter.

The drawings are objected to. Applicants have amended Figure 2 to correct the position of reference numeral 214. Applicants have added reference numeral 215 in Figures 2 and 3 to mark the fluid outlet of the concentration chambers, as described in original claim 20. An additional membrane 210 has been added to Figures 2 and 3 to separate the cathode chamber 212 and depletion chamber 205, as described in paragraph [0020] of the specification. The arrow head and lead line for reference numeral 212 have been joined in Figure 3, as requested by the Examiner. In Figure 4, a lead line has been added for reference numeral 403 to indicate the membrane closest to the anode (paragraph [0029]), as requested by the Examiner. In Figure 5, reference numeral 507 has been added to mark an additional membrane surrounding low concentration chamber 502, as described in paragraph [0034]. Also in Figure 5, the plus sign for reference numeral 504 has been changed to a minus sign, as supported by the specification's description of a cathode 504 in paragraph [0034]. The minus sign for reference numeral 505 has been changed to a plus sign, as supported by the

specification's description of an anode 505 in paragraph [0034]. Applicants submit that the changes made herein are supported by the specification and do not introduce new matter. Applicants respectfully request withdrawal of the objection to the drawings.

Claims 1-49 remain pending in the application and are shown above. Claims 6, 26, 27, 36, 37, and 48 have been canceled by Applicants. Claims 1-49 stand rejected by the Examiner. Reconsideration of the rejected claims is requested for reasons presented below.

Claims 1-3, 5, 18-20, 22, 28-29, 31-32, 35, and 49 have been amended to more clearly recite the claimed subject matter. Claims 2 and 41 have been amended as to matters of form. Claims 3, 5, 14, and 20 have been amended to correct typographical errors. Applicants have added new claims 50-53 to claim additional aspects of the invention. Applicants have added new claims 54-58 to more clearly recite the subject matter of canceled claims 36 and 37. Applicants submit that the changes made herein do not introduce new matter. Applicants submit that new claims 50-58 are patentable for the reasons discussed below with respect to claims 1-49.

Claims 3, 5, and 37 stand rejected under 35 U.S.C. § 112, second paragraph. Applicants have amended claims 3 and 5 to refer to "anionic" and "cationic" membranes rather than "anodic" and "cathodic" membranes as requested by the Examiner. Applicants have canceled claim 37. Applicants respectfully request withdrawal of the rejection of claims 3 and 5.

Claim 28 is rejected under 35 U.S.C. § 102(b) as being anticipated by *Oka, et al.* (U.S. Patent No. 4,324,629). Applicants have amended claim 28 to clarify that copper is plated onto a semiconductor substrate. Applicants respectfully submit that *Oka, et al.* describes plating a stainless steel plate with a copper plating solution and regenerating the copper plating solution, but does not teach or suggest plating copper onto a semiconductor substrate.

Thus, *Oka, et al.* does not teach, show, or suggest a method for plating copper, comprising supplying an electrolyte solution to a copper plating cell, plating copper onto a semiconductor substrate in the plating cell with the electrolyte solution, removing used electrolyte solution from the plating cell, and refreshing a portion of the used electrolyte

solution with an electrodialysis cell, as recited in amended claim 28. Applicants respectfully request withdrawal of the rejection of claim 28.

Claims 1-9 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-38 of co-pending Application No. 10/358,781. In a telephone conversation between Keith Tackett and the Examiner on September 9, 2004, the Examiner indicated that the office action should state that claims 1-49 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-38 of co-pending Application No. 10/358,781. Applicants respectfully traverse the rejection.

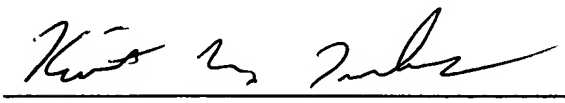
The Examiner asserts that the conflicting claims are not patentably distinct from each other because the claims of the co-pending application clearly encompass and render obvious the claims of the instant application. Applicants note that co-pending Application No. 10/358,781 is a later filed application having a separate basis for patentability. Applicants submit that claims of co-pending Application No. 10/358,781 do not encompass and render obvious the claims of the instant application, as the claims of the instant application do not suggest a plating cell comprising an anolyte compartment and a catholyte compartment as recited in the co-pending application. Thus, Applicants respectfully submit that the Examiner has not shown two-way obviousness between the claims of the conflicting applications, as is required for an obviousness-type double patenting rejection (MPEP § 804 II.B.1(b)). Applicants respectfully request withdrawal of the obviousness-type double patenting rejection of claims 1-49.

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed.

The secondary references made of record are noted. However, it is believed that the secondary references are no more pertinent to the Applicants' disclosure than the primary references cited in the office action. Therefore, Applicants believe that a detailed discussion of the secondary references is not necessary for a full and complete response to this office action.

Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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IN THE DRAWINGS:

The attached sheets of drawings includes changes to Figures 2-5. These sheets, which include Figures 1-5, replace the original sheets including Figures 1-5 In Figure 2, the upper 214 reference numeral has been moved. Former upper 214 reference numeral has been changed to 215. An additional membrane 210 has been added to Figure 2. In Figure 3, reference numeral 215 has been added to mark outlet 215. An additional membrane 210 has been added to Figure 3. The arrow head and lead line for reference numeral 212 have been joined in Figure 3. In Figure 4, a lead line has been added for reference numeral 403. In Figure 5, reference numeral 507 has been added to mark an additional membrane. Also in Figure 5, the plus sign for reference numeral 504 has been changed to a minus sign, and the minus sign for reference numeral 505 has been changed to a plus sign.

Attachment: **Replacement Sheets**
Annotated Sheets Showing Changes

ANNOTATED SHEET
ATTY DKT. NO.: AMAT/6394/PPC/ECP/RKK
U.S. SERIAL NO.: 10/074,569 CONFIRMATION: 1753
FILED: February 11, 2002
APPLICANT: APPLIED MATERIALS, INC.
TITLE: Apparatus and Method for Removing Contaminants from Semiconductor Copper Electroplating Baths
INVENTOR: Kovarsky, et al.
SHEET 1 OF 4

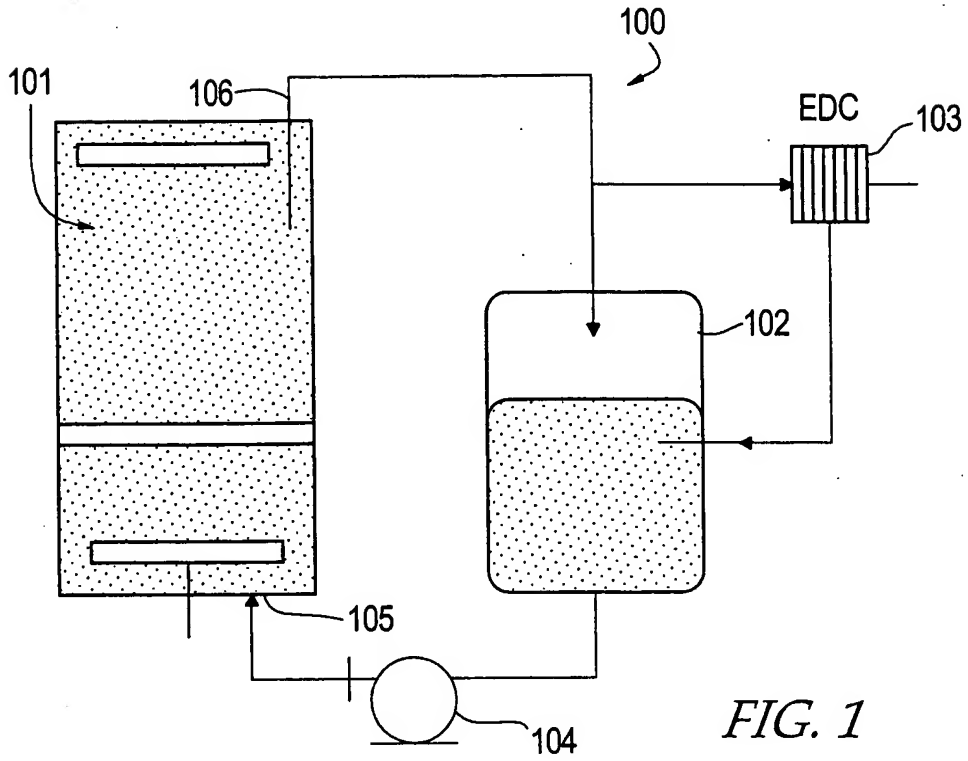

FIG. 1

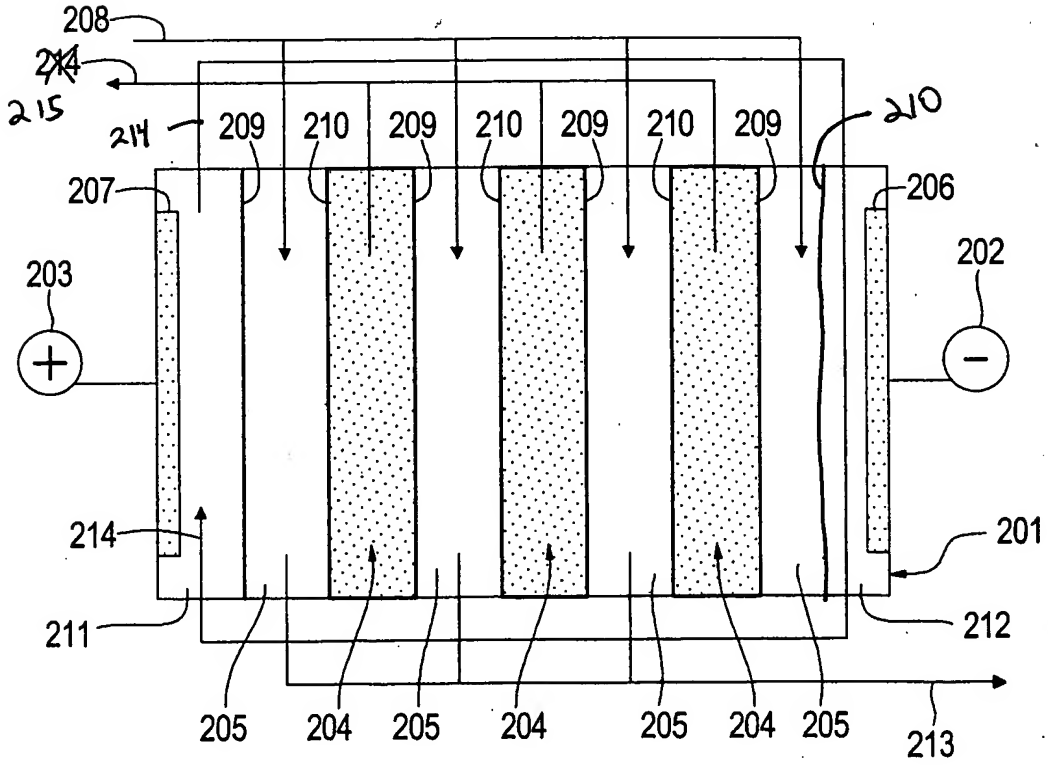

FIG. 2

ANNOTATED SHEET
ATTY DKT. NO.: AMAT/6394/PPC/ECP/RKK
U.S. SERIAL NO.: 10/074,569 CONFIRMATION: 1753
FILED: February 11, 2002
APPLICANT: APPLIED MATERIALS, INC.
TITLE: Apparatus and Method for Removing Contaminants from Semiconductor Copper Electroplating Baths
INVENTOR: Kovarsky, et al.
SHEET 2 OF 4

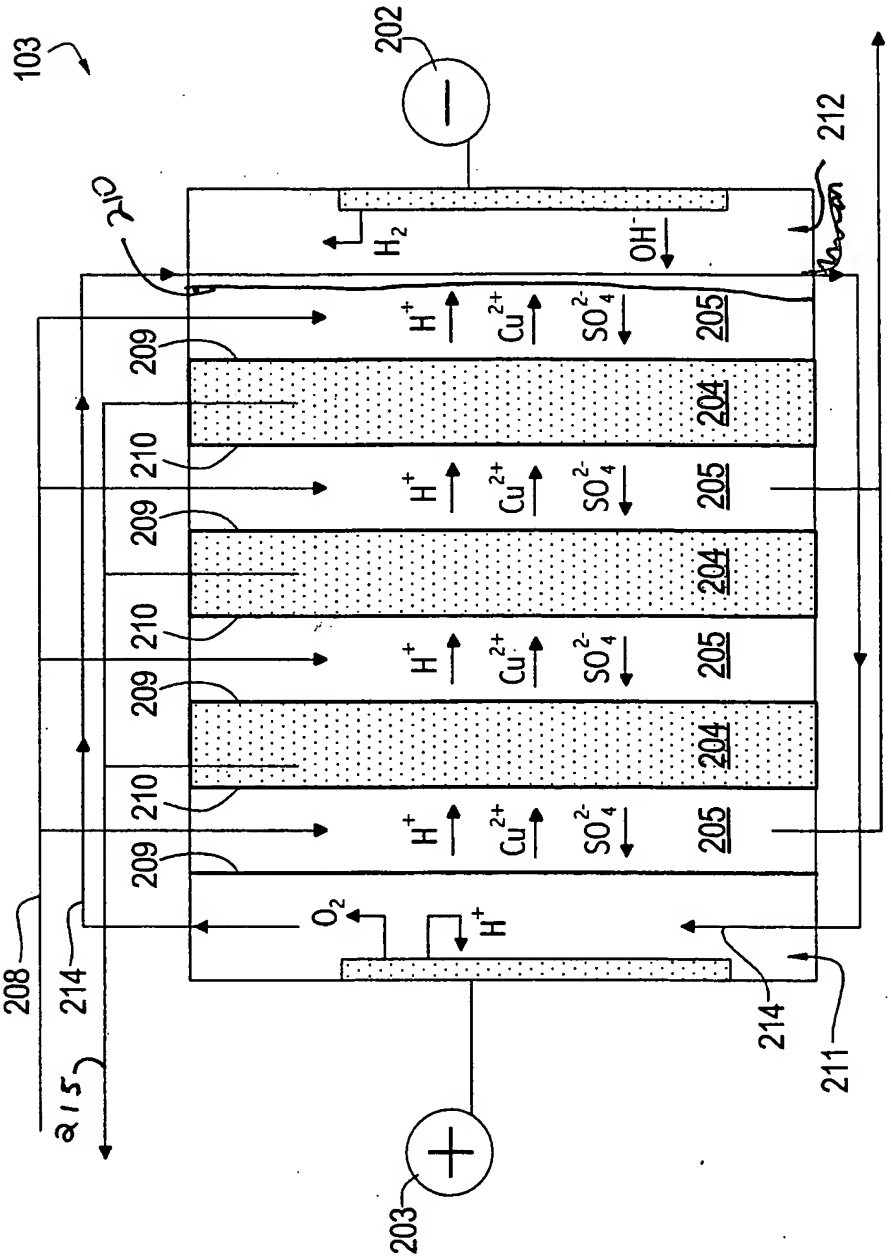

FIG. 3

ANNOTATED SHEET
ATTY DKT. NO.: AMAT/6394/PPC/ECP/RKK
U.S. SERIAL NO.: 10/074,569 CONFIRMATION: 1753
FILED: February 11, 2002
APPLICANT: APPLIED MATERIALS, INC.
TITLE: Apparatus and Method for Removing Contaminants from Semiconductor Copper Electroplating Baths
INVENTOR: Kovarsky, et al.
SHEET 3 OF 4

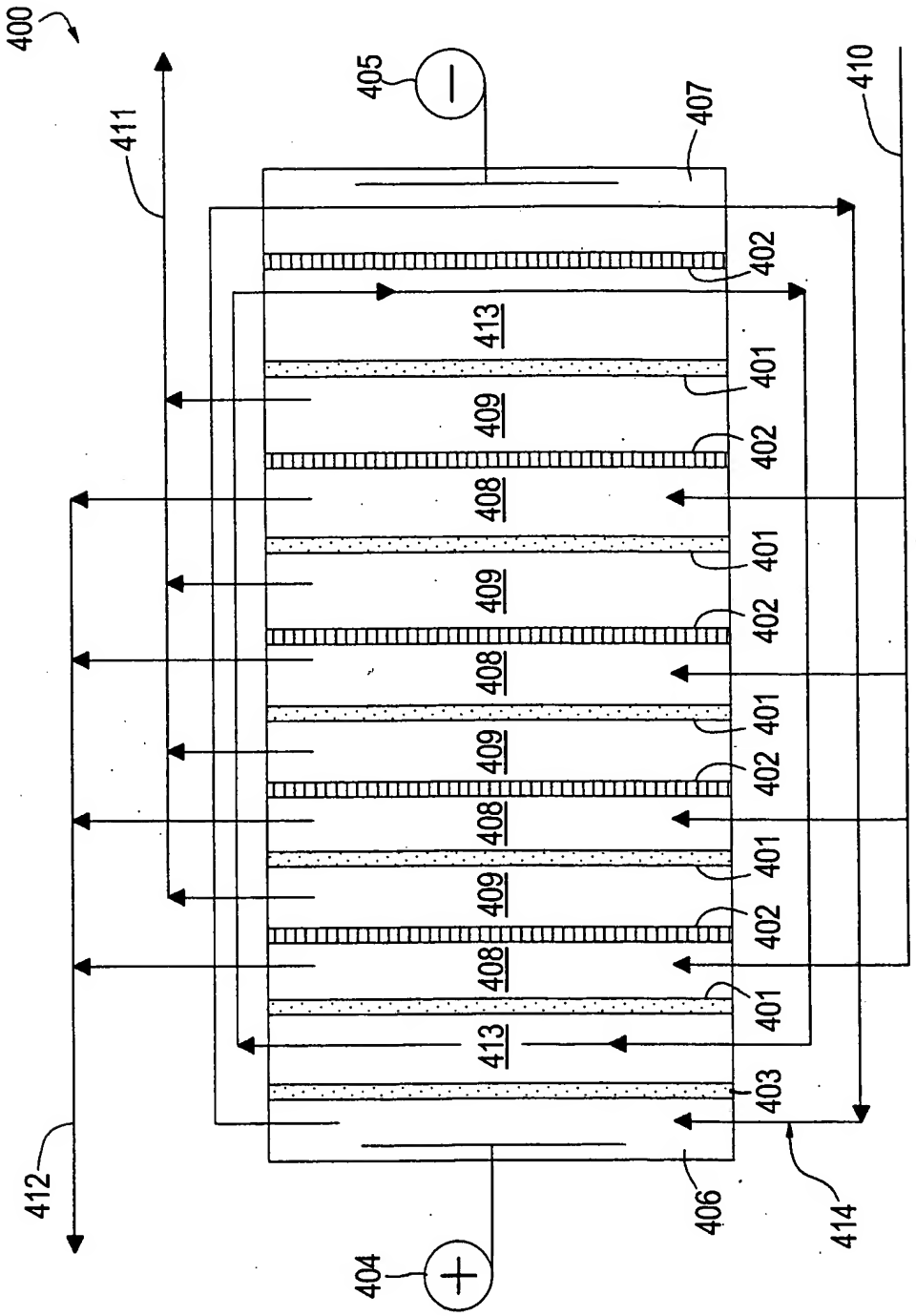

FIG. 4

ANNOTATED SHEET
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U.S. SERIAL NO.: 10/074,569 CONFIRMATION: 1753
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TITLE: Apparatus and Method for Removing Contaminants from Semiconductor Copper Electroplating Baths
INVENTOR: Kovarsky, et al.
SHEET 4 OF 4

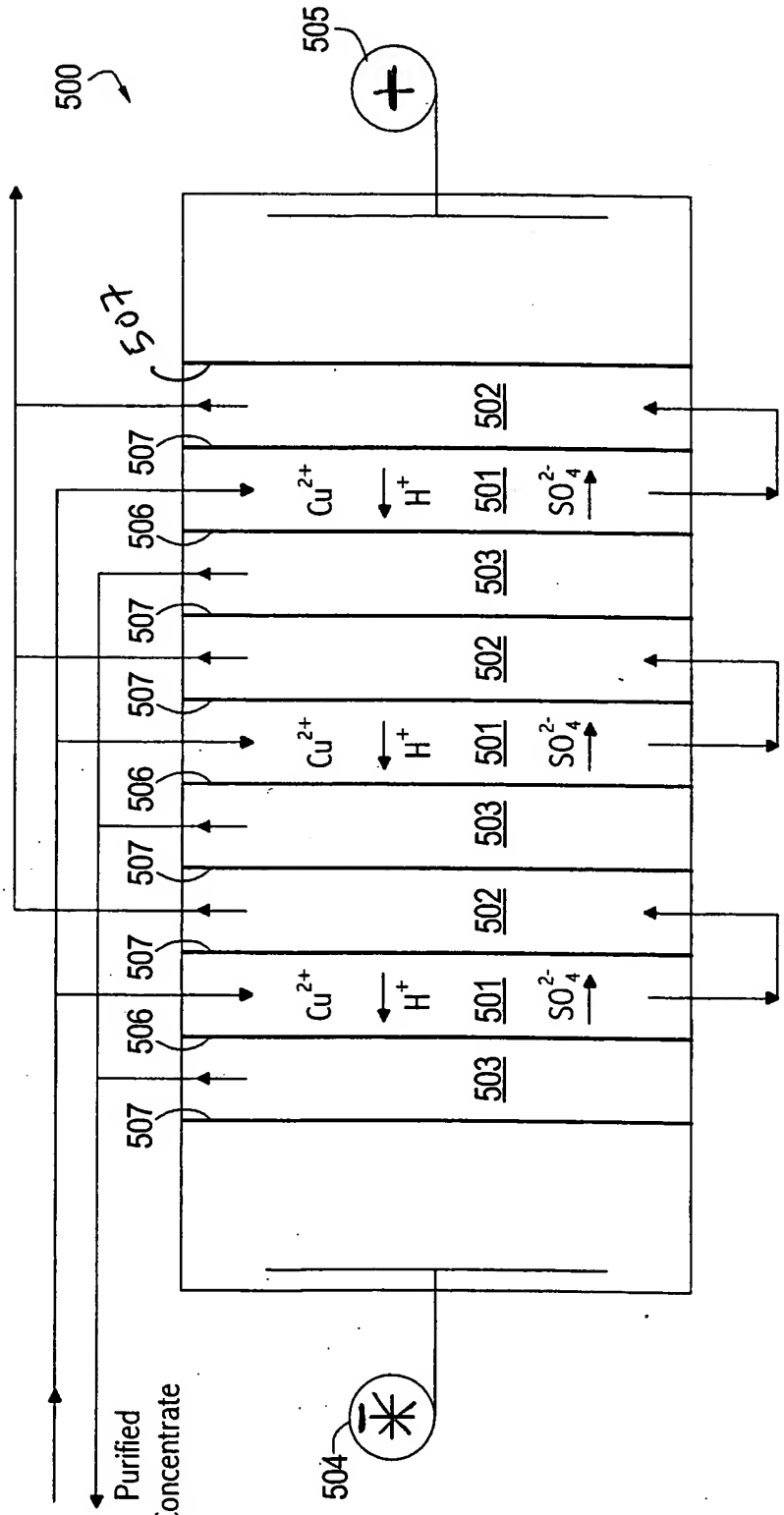

FIG. 5